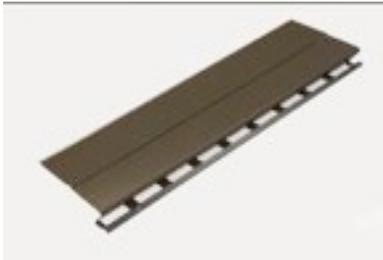


## FreeFlow Installation Instructions:

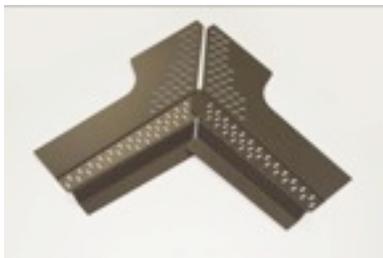
### Unit 1: MATERIALS



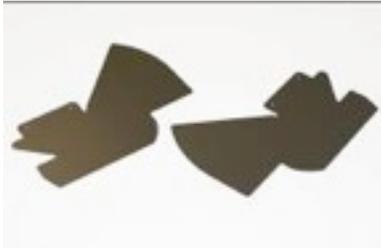
FreeFlow panels are manufactured from durable .024 aluminum and are 4 ft. long.



High Flow panels are slotted to absorb high concentrations of water caused by converging roof lines or downspouts. They can also be used in conjunction with inside miters to handle heavy streams of water from very large or steep valleys.



Prefabricated inside miters use low profile diverter and flow directional slots to effectively drain heavy water flow from roof valleys.



End caps keep birds and other animals from entering the gutter system.



Stainless steel, painted zip screws are included with every box of material.

**The following equipment will be needed to complete the job:**



Ladder with standoff



Cordless drill bit with 1/4" nut drive



Tin snips



Tape measure



Pencil or marker



Hand Seamers



Putty knife



Square

## Unit 2: PREPARATION

In order to prepare for the installation of FreeFlow there are a few steps to follow.



First, determine the amount of material you will need by using a measuring wheel or tape measure



Count the number of inside miters, and end caps you will need.



If you notice certain roofing situations that will concentrate water into heavy streams, consider ordering high water flow panels to drain the extra water.



The ideal gutter positioning is 1"-2 1/2" below the roofing material. It may be necessary to raise or lower the gutter. To check this positioning, use a test panel. Ideally, the panel should have a downward slope of between five and twenty degrees.



Now that the positioning has been tested the next step in preparation is to clean the gutters.



To ensure the free flow of water through the system we suggest running water into the gutter and checking the downspouts for unobstructed water flow.



While cleaning, make sure the gutters are properly sloped and sealed.



Seal and fix with caulking if necessary.

### Unit 3- INSTALLATION



Before beginning the installation, you must determine, based on ease of installation, whether the panels will be best installed under the first row of shingles or between the starter row and the first row of shingles. Use a putty knife to loosen the shingles as needed.



Once the shingles are loosened, adjust the panel to the appropriate roof pitch by using hand pressure or a siding break. Remember that FreeFlow should be installed with a slight 5-20 degree downward slope. It is not necessary to bend the panels if they are already within this range.



Working left to right; insert the back end of the panel under the shingles. Slide the panel into position on top of the gutter lip.



Check for downward slope.



Using 2 to 3 screws per panel, fasten the panel to the gutter lip. Once the first panel is secured in place, begin positioning the next panel by starting the back edge under the tab of the first panel. This will ensure a strong over/under interlock. Push panel back, until the nose of the second panel overlaps the nose of the first panel.



Insert the tab of panel 1 into the opening in panel 2. Secure with zip screws through the gutter lip.



You can use an additional screw to secure the interlocking areas of the top of the panel, if desired.



Repeat these steps to complete the installation of your FreeFlow panels.

#### **Unit 4- ENDCAPS**



In order to ensure a properly finished end cap there can be no gaps thumb sized or larger.

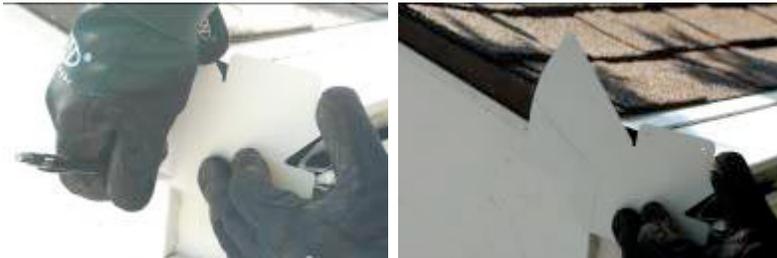


This occurs frequently with gutters that extend beyond the roof line. Even gaps this small can allow birds and small animals into the gutter system where they can quickly build nests.

To eliminate this problem, bend a piece of scrap metal to mimic the shape of the roof line and attach to the fascia board, leaving a 1/8" space for the end cap to slide into



Our end caps are designed to fit six inch gutters without needing to add material. For five inch gutters, hold the end cap up to the end of the gutter and mark as needed to get the proper fitting piece.



Using tin snips, trim for a tight fit inside the gutter, and mark the upper flange to fit.



Bend the installation flange to 90 degrees.



Next bend the upper flange along your mark.



To finish, position the upper flange under the shingles and the installation flange over the cover.



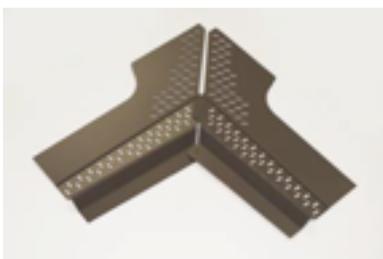
Finally, secure the end cap with two zip screws in the provided pilot holes.



## Unit 5- INSIDE MITERS



Let's take a look at valleys next. Roof valleys, especially those with flashing, funnel and concentrate water flow.



Our inside miters are manufactured to make the inside corner installation easy and tidy. Additionally, they are engineered with a built in diverter to handle the extra water flow of the roof valley.



In order to install the inside miter, first mark and trim the corner panels to fit.



For an open valley, making a few simple bends will allow the miter to better fit the profile of the valley rib.



For a closed (or weaved) valley, trimming the miter will easily allow it to slide under the shingle.

Once the miter is positioned properly, fasten with screws in the provided pilot holes.



When working with valleys that have excessive water flow, use our High Flow panels in addition to the miters, for the inside corner installation.



## Unit 6 - OUTSIDE CORNERS

When installing the outside corners, measure the distance from the outside miter of the gutter to the location where the panel will interconnect. Mark the panel that will become the outside miter.



Using a quick square, make 45 degree angle markings. Leave tabs on the 45 degree angle to ensure an overlap in the seam.



You will need to cut the underside at the same angle to create the proper fit.



To avoid the nails in the roof crown, mark and trim the upper portion of the panel as shown.



Now that the panel is custom trimmed to fit, slip it under the shingles and fasten to the gutter lip.



Mark and trim the second panel as you did for the first, except that it does not need a tab. Trim for crown nails here as well.



You are ready to position the second panel. Align it with the outside corner, over the top of the tab of the first panel.



To finish, fasten with 2 zip screws, for a beautiful tight outside corner.



For bay windows repeat the same process, but cut the corners at a 22.5 degree angle instead of at a 45 degree angle.

## Unit 7 - METAL AND TILE ROOFS

As a product that installs under the first row of shingles, FreeFlow can also be installed on metal and tile roofs with some minor adjustments.



For metal and tile roofs, cut the trim coil to strips measuring ten feet by three inches.

Using a siding break, now bend the trim coil to a ninety degree angle.



Next, measure and mark the panels approximately two inches from the hem, depending on the size of the house's gutter.



Now, score the panel lengthwise at the mark so that it can be easily removed.





You are now ready to zip screw the trim coil sections to the fascia or flashing.



Slide your panel into the slot between the trim coil material and the roofing material.



Finally, zip screw the panel to the gutter lip and down through the trim coil.

Repeat this process to complete the rest of the home.

### **Unit 8- Shake Roofs**

The FreeFlow panels also install nicely on homes that have cedar shake roofs.



As you would in any other installation, working left to right; insert the back end of the panel under the shingles.



Lift each individual shingle as you slide the rest of the panel into place under the shingles.



Interlocking the panels on a shake roof can be a challenge. If this is the case, simply overlap the panels to make sure that no gaps are left. If you decide to overlap instead of interlock the panels, use a screw to secure the panels together on the top.



To complete your installation, simply repeat these steps.